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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER

HECK, MICHAEL C

ART UNIT PAPER NUMBER

3623

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/853,658

Applicant(s)

BEYER ET AL.

Examiner

Michael C. Heck

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Final Office Action is responsive to applicant's amendment filed 09 September 2005. Applicant amended claims 1-2, 4-8, 10-17 and 19. Currently, claims 1-19 are pending.

Response to Amendment

2. The objection to the specification in the last Office Action has been overcome by the applicant's amendment to the specification.
3. The 35 USC §101 rejection in the last Office Action for claims 1-19 has been overcome by the applicant's amendment to the claims.

Response to Arguments

4. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection. The Examiner notes that the independent claims were amended to add the practical application of using the plurality of meta-segments to design a promotional campaign. Applicant argues that Richards (Richards, A Discrete/Continuous Model of Fruit Promotion, Advertising, and Response Segmentation, Agribusiness, vol. 16, No. 2, p. 179-196, 2000 [GOOGLE]) does not teach or suggest further separating these groups into meta-segments, wherein each meta-segment represents a second group of customers sharing a same response to all promotions. McArdle et al. (U.S. Patent 6,622,126) teach segment migration that tracks which people are in which segment at each time period, then builds a file that gives, by

Art Unit: 3623

person, a description of which segment(s) each person belonged to during each time period (col. 1, lines 64-67). Please see the 35 U.S.C §103(a) rejection below.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards (Richards, A Discrete/Continuous Model of Fruit Promotion, Advertising, and Response Segmentation, Agribusiness, vol. 16, No. 2, p. 179-196, 2000 [GOOGLE]) in view of McArdle et al. (U.S. Patent 6,622,126). Richards discloses a global campaign optimization with promotion-specific customer segmentation comprising:

- **[Claim 1]** segmenting each customer in a plurality of customers into a segment in a plurality of segments for each promotion in a plurality of promotions, such that for a promotion there is a corresponding set of segments, wherein each segment in said set of segments represents a first respective group of customers having a certain response to said promotion (Para 5, 8, 15-16, and 18, Richards teaches by segmenting customers by their responsiveness to promotions, advertising, or to changes in price, and then describing a typical member of each segment by his or her demographic attributes, this study provides the type of information managers need to reach buyers of their products much more efficiently. The objective of this study is to determine the effect of price-promotion and media advertising on the discrete choice of a certain type of fruit. The study also seeks to define unique segments of consumers based on their responsiveness to these variables. At the choice-level this approach provides elasticities of category and variety choice with respect to advertising, product loyalty, and promotional deals. Many studies emphasize the importance of constructing market segments that group consumers with similar responses to marketing

Art Unit: 3623

variables. This study segments fruit consumers in their choice and purchase quantity elasticities with respect to price, promotion, and advertising. In each case, the analysis begins by estimating the single segment purchase quantity model where the response elasticities vary by household. Because CMR (Competitive Media Reporting, Inc.) reports their findings on a monthly basis only, and the unit of observation here is an individual shopping trip, the amount of advertising exposure is assumed to be constant for all shopping trips taken within a particular month/market observation. With six monthly advertising observations per household and six different sample markets, the CMR data provides sufficient variation to estimate meaningful advertising response parameters. The Examiner interprets Richards to suggest segmenting each customer for each promotion to provide meaningful advertising response parameters.);

Richards fails to teach separating said plurality of customers into a plurality of meta-segments, wherein each meta-segment in said plurality of meta-segments represents a second respective group of customers sharing a same response to all promotions in said plurality of promotions; and using the plurality of meta-segments to design a promotional campaign. McArdle et al. teach segment migration that tracks which people are in which segment at each time period, then builds a file that gives, by person, a description of which segment(s) each person belonged to during each time period. Figure 2 shows an exemplary screen of a computer program. Customer transactions are collected and stored in a database and includes the customer ID, what items were bought, and when the items were bought. The customer transaction data is separated into monthly (or other periodic) sales datasets, grouping items by product category, retaining the customer ID, money spent in each product category and month bought. The customers are assigned into defined segments of people using data mining algorithms or user defined set of rules. Two or more monthly segmentations are selected and these datasets are merged into a single segment migration dataset using

Art Unit: 3623

the customer ID as the common key. The segment migration dataset is summarized into number of customers with the same segment migration signature. This data can be re-integrated with the customer's data warehouse to support marketing actions. That is, once the customer segmentation migration history has been displayed, the user can target specific customers, with particular patterns of migration for targeted marketing or promotions (Figure2, col. 1, lines 64-67, col. 2, lines 66-67, col. 3, lines 34-67, col. 4, lines 48-53). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify Richards with a segment migration analysis of McArdle et al. since Richards teach a two-stage framework that considers both the discrete choice and continuous quantity decisions (Para 7). Market Segmentation gleans consumer choice categories to allow companies to better target the customers with their needs. Richards teaches his study wants to determine how promotion and advertising influences a consumer's decision regarding when to buy a particular product, and how much to buy on a given shopping occasion (Para 2). McArdle et al. teach improved means for analyzing the behavior of members of customer segments. The user can target specific customers, with particular patterns of migration for targeted marketing or promotions (col. 1, line 52-53 and col. 4, lines 51-53). Therefore, market segmentation allows companies to be more focused in their approach to targeting customers. Both Richards and McArdle et al. are performing market segmentation. Richards suggest that perhaps an even more useful application of this type of research would be as a tracking tool – to follow these households over many survey periods and monitor the relative size of each segment (Para 29). McArdle et al. teach tracking how

Art Unit: 3623

people change segments over their lives by tracking which people are in which segment at each time period, and then builds a file that gives, by person, a description of which segment(s) each person belonged to during each time period. Therefore, there is motivation and or suggestion to combine Richards and McArdle et al. There is a reasonable expectation of success since both Richards and McArdle et al. are solving the same problem of how to best direct promotions to potential customers. Richards in combination with McArdle et al. teach all the claim elements as indicated above.

- **[Claim 2]** specifying a number of meta-segments based on customer demographics, wherein said customer demographics define characteristics of said plurality of customers (Richards: Para 15-16, Richards teaches segmenting fruit consumers in their category choice and purchase quantity elasticities with respect to price, promotion, and advertising. Profiles describing each cluster are then found by calculating the mean of each demographic attribute, where the attributes include household income, number of household members, the age and education of the household-head, and the frequency with which the household buys some type of fruit over the sample period. The Examiner interprets Richards to specify the number of segments based on demographics.).
- **[Claim 3]** said number of meta-segments is specified such that the maximum number of customers are represented by said meta-segments (Richards: Para 16, Richards teaches using elasticities with respect to price, promotion, advertising, and loyalty as descriptors, the study used a k-means clustering algorithm to define segments of like consumers. Each subsequent observation is assigned to the cluster that is closest to, where the distance between an observation and the cluster center is defined in Euclidean terms. A more formal approach to testing the cluster models' appropriateness is to use an F-test of the hypothesis that the mean responses for all segments are equal.).
- **[Claim 4]** executing an algorithm for determining a number of customers in each meta-segment to receive a particular promotion (Richards: Para 16, Richards teaches using elasticities with respect to price, promotion, advertising, and loyalty as descriptors, the study used a k-means clustering algorithm to define segments of like consumers. Each subsequent observation is assigned to the cluster that is closest to, where the distance between an observation and the cluster center is defined in Euclidean terms.

Art Unit: 3623

A more formal approach to testing the cluster models' appropriateness is to use an F-test of the hypothesis that the mean responses for all segments are equal.).

- **[Claim 5]** said segmenting each customer is accomplished using a segmentation method selected from the group consisting of CART (Classification and Regression Tree), k-means, k-harmonic means and clustering (Richards: Para 16, Richards teaches using elasticities with respect to price, promotion, advertising, and loyalty as descriptors, the study used a k-means clustering algorithm to define segments of like consumers. Each subsequent observation is assigned to the cluster that is closest to, where the distance between an observation and the cluster center is defined in Euclidean terms. A more formal approach to testing the cluster models' appropriateness is to use an F-test of the hypothesis that the mean responses for all segments are equal.).
- **[Claim 6]** said separating said plurality of customers comprises: associating with each customer a vector representing a combination of a segment and a promotion (Richards: Para 18, Richards teaches because CMR (Competitive Media Reporting, Inc.) reports their findings on a monthly basis only, and the unit of observation here is an individual shopping trip, the amount of advertising exposure is assumed to be constant for all shopping trips taken within a particular month/market observation. With six monthly advertising observations per household and six different sample markets, the CMR data provides sufficient variation to estimate meaningful advertising response parameters. The Examiner interprets Richards to suggest segmenting each customer for each promotion to provide meaningful advertising response parameters.).
- **[Claim 10]** determining a particular promotion to be provided to said customer (Richards: Para 33, Richards teaches the primary value of the type of information provided here, and the general analytical approach, is as a component of a category management, ECR (efficient consumer response), or similarly information-intensive marketing program.).

Claims 7-9 and 11-19 substantially recite the same limitations as that of claims 1-6 with the distinction of the recited method on a computer readable medium being a method of software execution and a computer-implemented method. Hence the same rejection for claims 1-6 as applied above applies to claims 7-9 and 11-19.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 3623

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Michael C. Heck whose telephone number is (571) 272-6730. The Examiner can normally be reached Monday thru Friday between the hours of 8:30am - 4:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq R. Hafiz can be reached on (571) 273-6729.

Any response to this action should be mailed to:

Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

Or faxed to:

(571) 273-8300

[Official communications; including After Final communications labeled "**Box AF**"]

(571) 273-6730

[Informal/Draft communication, labeled "**PROPOSED**" or "**DRAFT**"]

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21 October 2005

Susanna Diaz
SUSANNA M. DIAZ
PRIMARY EXAMINER

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